WENCK File #2579-11
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MDU 88MW Simple Cycle Combustion Turbine
Post-Construction Inspection Report
PU-11-631

Prepared for:

North Dakota Public Service Commission

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Construction inspection report
Wenck Associates, Inc.
Luke Nelson, Project Engineer

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APPENDICES

1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Montana-Dakota Utilities Co. (MDU) 88MW Simple Cycle Combustion Turbine (natural gas) in Morton County, North Dakota (ND), constructed and operated by MDU. Construction of the Project was completed in July 2014. Wenck reviewed all Project documents to identify those aspects that required compliance, and visually inspected the Project area on 16 July 2013 and 2 September 2014.

The Project was first inspected on 16 July 2013. Wenck observed that the construction site was in good condition with silt fence and erosion control devices installed at appropriate locations and working effectively. A second inspection of the Project took place on 2 September 2014 and similar findings were documented as during the first inspection. In addition, construction was complete, the site had been cleaned up, and reclamation had occurred on the acreage that was not needed for long-term use.

There were several non-critical issues that may need to be resolved for the Project to be considered complete and in full compliance, including 1) written verification of some items, 2) verification of final reclamation and vegetation establishment, and 5) tree and shrub inventories. Wenck expects follow-up actions taken by MDU to address these particular issues can be corroborated in writing or photos and will not require a subsequent site visit. Wenck recommends the PSC take the following steps to resolve these issues.

2.0 Background and Scope

2.1 INTRODUCTION

The Montana-Dakota Utilities Co. (MDU) 88 Megawatt (MW) Simple Cycle Combustion Turbine (SCCT) (Project) was completed in July 2014 in Morton County, North Dakota (ND). The Project was constructed and operated by MDU. The Project is an 88MW natural gas simple cycle combustion turbine generator and associated facilities located on MDU's Heskett Station. The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Findings of Fact, Conclusions of Law, and Order in Case No. PU-11-631 on 21 December 2012, granting a Certificate of Site Compatibility for Energy Conversion Facility No.32.

2.2 PURPOSE

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the Public Service Commission to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Post-construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order). The North Dakota PSC retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the Project.

2.3 METHODS AND SCOPE OF INSPECTION

2.3.1 Project Compliance Items Identified

Wenck identified a list of "Project Specifications", which MDU was obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application for a Certificate of Site Compatibility (Application), 3) Project plans described in the Findings of Fact, 4) Orders, and 5) recommendations by other agencies. These Project specifications are listed in Table 2.1 under 7 categories: Siting & Location; Project Design & Engineering; Pre-Construction; Cultural Resources; Natural Resources; Construction, Reclamation & Soils; and Operation.

2.3.2 Document Review

Wenck staff reviewed publicly-available Project documents in the PSC Online Case Search (ND PSC 2014) to find written verification of compliance for the Project specifications listed in Table 2.1. If written verification was filed, the findings are described in Section 3 and the source and name of the documentation is listed in Table 2.1, Column 3 (Written Verification). Green boxes in the table represent Project specifications that are potentially non-compliant because they have no written verification.

2.4 ON-SITE INSPECTIONS

Kevin Magstadt (P.E. North Dakota), Wenck Principal member, visited the Project site on 16 July 2014. He was escorted throughout the site by Brian Ulberg (MDU) and Aaron Armbrecht (Sega Construction, Inc.). A second visit was conducted by Lucas Nelson, a Wenck project engineer, who visited the site on 2 September 2014, accompanied by Brian Ulberg.

The site was inspected visually by walking the perimeter of site and examining several points of interest within the site. Points of interest included stormwater inlets, grading around the turbine, the stormwater pond, and the wetlands to the southwest. Digital photographs (Canon Power Shot SD1300 IS, 12 megapixel) were taken showing typical Project infrastructure and documenting problem areas (**Appendix A**).

Table 1: Project Specifications with Written or Site Verification Information

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	SITING & LOCATION		
App. p. 4, Findings of Fact 2	Designated location in Morton County, ND. Project Area consists of approximately 14.9 acres, with 5.5 acres of permanent conversion.	Docket #5, Appendix A, p. A-1 Project Area	Section 3.1.1
NDCC 49-22-16; Findings of Fact 4	Compliance with county/city land use, zoning, rules, regulations, ordinances. Proposed project is to take place on MDU's Heskett Station property. This project has been zoned industrial by the City of Mandan, and residences west of the project are zoned as agricultural.	Docket #5, Appendix A, p. A-1 Project Area	Section 3.1.2
ND Admin. Code Article 69-06-08; App. p. 7-12; Findings of Fact 10-21; Conclusions of Law 3-7	Siting Criteria analysis – exclusion, avoidance, selection, and policy. No exclusion or avoidance areas within study area, with the exception of prime and unique farmland (see below). No impacts to Selection Criteria. Meets Policy Criteria.	Docket #5, Application	Section 3.1.3
ND Admin. Code Article 69-06-08-01(1); Findings of Fact 11	The Project site contains land classified as farmland. The Commission found that the amount of farmland to be removed will have a negligible impact on agricultural production and therefore the exclusion for prime or unique farmland shall not apply.	Docket #5, Appendix C, p. C-25, letter from NRCS (9-30-11); Application p. A-2, Figure 2, Land Use	Section 3.1.4
	PROJECT DESIGN & ENGINEERING		
App. p.1,3,4,12-14; Findings of Fact 6, 7	The Project consists of one natural gas-fired General Electric PG7121(EA) simple cycle combustion turbine packaged power plant designed to produce 88 MW of gross output at average ambient site-specific conditions. The turbine is an internal combustion engine consisting of a rotating compressor, a combustion chamber, a rotating downstream turbine, and an exhaust system.	N/A	Section 3.2.1
App. p. 13; Findings of Fact 3	Associated facilities in the project area include: service building and control room; maintenance shop; parts warehouse; electrical switchgear room; onsite wastewater treatment system with septic tank and leach field; electrical interconnection facilities; natural gas pipeline interconnection facilities and metering station; and additional space for other service-related equipment.	N/A	Section 3.2.2
Certification 30	Provide engineering design drawings prior to construction upon request.	Docket #5, Application;	N/A

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
		Appendix A, Figures A-7 and A-8	
Certification 32	Provide as-built design specifications and associated GIS files within 3 months after construction complete.	None	N/A
	PRE-CONSTRUCTION		
NDCC 49-22-07.1; ND Admin. Code Article 69-06-03	Letter of Intent.	Docket #1, Letter of Intent	N/A
NDCC 49-22-08; ND Admin. Code Article 69-06-04	Application for a Certificate of Site Compatibility	Docket #5, Application	N/A
NDCC 49-22-07; Certification 1, 6	Certificate of Site Compatibility; subject to suspension or revocation	Docket #5,14	N/A
NDCC 49-22-04; ND Admin. Code Article 69-06-02; App. p. 7	Ten-year Plan	Case #PU-11-503	N/A
Certification 2, 5	Conduct Pre-construction Conference. Provide notice of intent to start construction. Once started Company shall keep the Commission and the Commission's third-party construction inspector updated of construction activities on a weekly basis.	Docket #38, Pre-construction Conference Minutes, including notice of intent to start construction; Docket #39, Weekly Construction Report, start date 29 Apr 2013	N/A
Certification 31, 34	Inform Commission of plans to modify facility, associated facilities, or roadways and obtain written approval. Any facilities not included in current Application must be applied for in a separate Route or Site Permit.	None filed to date.	N/A
Certification 3,4; App. p. 33-38	Compliance with rules and regulations of other jurisdictional agencies. Obtain permits and approvals from other agencies and provide copies prior to applicable permitted activity.	Docket #37, Heskett 3 Project Permits	N/A
	CULTURAL RESOURCES		
Findings of Fact 13; App.p.24, C-39	A Class III (pedestrian) survey for all areas directly impacted by the project was performed. NDSHPO concurred	Docket #5, Application, p. C-39, Letter concurring no	Section 3.4.1

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	with "No Historic Properties Affected" determination provided the nature of the work takes place as mapped in correspondence dated 16 September 2011.(NDSHPO Ref.:11-2735)	Historic Properties or Significant Sites affected	
App. p. 24; Certification 11,12	If any cultural resource, paleontological site, archeological site, historical site, or grave site is discovered during construction, it must be marked, preserved and protected from further disturbances until a professional examination can be made, report filed to PSC, and clearance to proceed is given.	No discoveries reported to date.	N/A
	NATURAL RESOURCES		
App. p. 26; p. C-38, NDSWC (10-7-11)	Expect no disturbances to wetlands, surface waters, or floodplains, as none are located within the project area. NDSWC: Project should have no impacts to floodplains.	Docket #5, Application p. A-6, Figure 6 Surface Waters; Appendix C, p. C-38, letter from NDSWC (10-7-11)	Section 3.5.1
App. p. 28	Expect temporary displacement of ground-dwelling wildlife due to clearing and construction of SCCT and associated facilities, but no significant impacts.	N/A	Section 3.5.2
App. p. 28; Finding of Fact 21	Project construction to take place near existing structures which deter avian species, including eagles and migratory birds, from landing or nesting. MDU will apply design features contained in the publications *"Avian Protection Plan Guidelines"* and *"Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006"* to overhead transmission and construction facilities as appropriate to minimize possible impacts.	N/A	Section 3.5.3
App. p. 30, C-27; USFWS (10-26-2011)	Potential habitat for the piping plover can be found approximately 0.3 miles away from the project site along the banks of the Missouri River. Habitats for other federally-listed species, including the Whooping Crane, were not located in the project area or in proximity close enough to be affected by the proposed project. The USFWS indicated that the project would have no significant impact on fish or	Docket #5, Appendix C, p. C-27, letter from USFWS (10-26-11)	Section 3.5.4

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
	wildlife resources. No endangered or threatened species are known to occupy the project area.		
App. p. 31, C-34 – C-37, NDPR (9-27-11)	NDPR stated project area is adjacent to several occurrences of animal species and significant ecological communities on record. However, these occurrences are not within the project area itself and no impacts are anticipated.	N/A	Section 3.5.5
Certification 10	Report presence of T+E species or critical habitat, bald or golden eagles during construction and operation.	None reported to date.	N/A
App. p. 27,32	Temporary and permanent vegetation impacts would occur during construction of the proposed project. Approximately 14.9 acres of mixed-grass prairie would be disturbed during construction of the SCCT, with approximately 5.5 acres permanently converted to the proposed SCCT.	Docket #39, Weekly Construction Report, start date 29 Apr 2013, clearing/ grubbing; Docket #98, Weekly Construction Report, construction complete 21 July 2014	Section 3.5.7
Certification 19	Tree and shrub removal and replacement will comply with "Tree and Shrub Mitigation Specifications".	Docket #71, 73, 74, 76, Tree Mitigation Plan; Docket #94, Final Tree and Shrub mitigation plan	Section 3.5.8
	CONSTRUCTION, RECLAMATION & SOILS		
App. p. 25; Findings of Fact 20; Conclusions of Law 6,7	MDU shall engage in erosion prevention and sediment control during and after construction. Upon completion of construction all unused land will be returned to its former condition.	Docket #39, Weekly Construction Report, start date 29 Apr 2013, clearing/ grubbing to Docket #98, Weekly Construction Report, construction complete 21 July 2014	Section 3.6.1
Certification 13	All buried facility crossings of graded roads shall be bored unless the responsible governing agency specifically permits Company to open cut the road.	N/A	Section 3.6.2
Certification 23	No staging areas on land not owned by Company, unless otherwise negotiated with landowners.	Docket #5, Application, Appendix A, Figures	Section 3.6.3

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
Applications p. 22; Certification 14, 25	The Project would utilize existing roads for access, new roads on-site, but no new construction of roads off-site. Haul road permits would be acquired where required. Temporarily disturbed areas and roads will be restored to original condition. Pre-existing roads restored to equal or better condition. Restoration of area as soon as practicable upon completion of construction.	Docket #5, Application, Appendix A, p. A-4; Docket #39-70, 80-87, 89-93, 95-98 Weekly Construction Reports	Section 3.6.4
Certification 15	Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage to roads or land.	Docket #39-70, 80-87, 89-93, 95-98 Weekly Construction Reports, excessive rain stopped construction	Section 3.6.5
Certification 16	During construction, at least 12 inches of topsoil, where available, must be stripped and separated from subsoil. Topsoil and subsoil must be segregated and replaced separately.	Docket #39, Weekly Construction Report, start date 29 Apr 2013, clearing/ grubbing, stripping of topsoil	Section 3.6.6
Certification 17; App p. 27, C-34, NDPR (9-27-11)	Reclamation, fertilization, and reseeding is to be done according to the NRCS recommendations, unless otherwise specified by the landowner and approved by the Commission. NDPR recommends seeding with native species.	None	Section 3.6.7
App. p. 21; Certification 20, 21, 24	Repair/replace all damaged fences and gates. Repair/replace damaged drainage tile. Waste removed and disposed regularly.	None	Section 3.6.8
NDCC 49-23; Certification 35	Notify the Commission if any damage occurs to underground facilities during construction, suspend construction until compliance with One-Call Excavation Notice System requirements has been determined and clearance to proceed has been given.	None filed to date.	Section 3.6.9
	OPERATION		
App. p. 17-20; Findings of Fact 17	The Project will use best available control technologies to minimize air emissions and comply with USEPA and NDDH air quality standards. MDU submitted an application for a Prevention of Significant Deterioration (PSD) (Air Permit Application) on May 4, 2012, deemed complete November 7, 2012. No risks to public health were identified.	None	N/A
App. p. 23; Findings of Fact	Small quantities of hazardous materials will be used and generated by	None	N/A

Source of Project Specification	Description of Project Specification	Written Verification*	Site Verification*
18	the proposed energy conversion facility. MDU will minimize the use of such materials and employ proper management and disposal procedures.		
App. p. 23-24; Findings of Fact 19	MDU conducted noise measurements of existing site conditions and modeling of noise expected to be generated from the proposed energy conversion facility. The project is not expected to cause a perceptible increase in the existing sound levels measured and noise levels will remain in compliance with the City of Mandan's Ordinance No. 1090.	Docket #5, Application; Appendix E, Noise Assessment	N/A
Order 3	Montana-Dakota shall submit an emergency response plan for the operation of the energy conversion facility prior to its commercial operation.	Docket #88, Emergency Action Plan	N/A
App. p.15, 34,35; Certification 7, 8, 9	Construct and operate in accordance with Application and safety requirements. Maintain records of compliance with Order and Certificate of Site Compatibility. Extraordinary events (e.g. injuries, T+E wildlife fatalities, discovery of large numbers of dead birds or bats) reported within 5 business days.	None reported to date.	Section 3.7.5
Certification 18, 24; App. p. 24	Reclamation and maintenance throughout life of facility. Waste removed & disposed regularly.	None	Section 3.7.6
Certification 22, 29	Shall mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility. Company shall establish a procedure for handling complaints concerning the proposed facility.	None filed to date.	Section 3.7.7
App. p. 22,23; Certification 26	Provide any necessary safety measures for traffic control or to restrict public access to transmission facility. Existing security measures at the site include a fence around the perimeter of the property, locked gates and a check-in system for visitors.	N/A	Section 3.7.8

3.0 Findings

3.1 SITE INFORMATION

3.1.1 Designated Location & Siting
The Project was built generally as proposed in the designated location described in the Application and Order.

3.1.2 Zoning
The Project took place on private land owned by MDU, zoned industrial by the City of Mandan. A residential development west of the project area is zoned agricultural. Site inspections confirmed that the project was built within the project area owned by MDU in the appropriate zoned area.

3.1.3 Siting Criteria
Siting criteria were analyzed in detail in the Application for the Project (Docket #5). With the exception of prime and unique farmland, discussed in Section 3.1.3, no exclusion or avoidance areas were within the project area. Wenck confirmed during the site inspection that there were no exclusion or avoidance areas within the Project area, and that there were no impacts to exclusion and avoidance areas near the Project area. Wenck also confirmed that impacts to selection and policy criteria were considered and kept at a minimum.

3.1.4 Land Use & Agricultural Impacts
The Project site contains land designated as "Farmland of Statewide Importance". However, the NRCS stated that the Farmland Protection Policy Act (FPPA) does not apply in this situation (letter dated 9-30-2011), and the Commission found that the amount of farmland to be removed would have a negligible impact on agricultural production. Prior to construction, the site was intact grassland and was not being used for cultivation or other agricultural purposes. Wenck confirmed during on-site visits that the Project was built as proposed within project boundaries and that temporary construction and staging areas had been reclaimed (Appendix A Photos 9 & 10). Therefore, other than an area of 5.5 acres of potential (but not current) farmland being permanently converted to industrial use, no land or agricultural impacts have been documented.

3.2 PROJECT DESIGN & ENGINEERING

3.2.1 Power Plant Infrastructure
The Project was authorized within 14.9 acres located adjacent to MDU's Heskett Station in Morton County, as described in the Application and at the hearing. The structure consisted of one natural gas-fired General Electric PG7121 (EA) simple combustion turbine packaged power plant (Appendix A Photo 12). The turbine was an internal combustion engine consisting of a rotating compressor, a combustion chamber, a rotating downstream turbine, and an exhaust system. Site inspections coincided with these descriptions of project infrastructure.

3.3 SITE AND VICINITY GENERAL CHARACTERISTICS

3.3.1 Power Plant Infrastructure
The Project was authorized within 14.9 acres located adjacent to MDU's Heskett Station in Morton County, as described in the Application and at the hearing. The structure consisted of one natural gas-fired General Electric PG7121 (EA) simple combustion turbine packaged power plant (Appendix A Photo 12). The turbine was an internal combustion engine consisting of a rotating compressor, a combustion chamber, a rotating downstream turbine, and an exhaust system. Site inspections coincided with these descriptions of project infrastructure.

3.3.2 Associated Facilities
During site inspections, Wenck observed the construction and completion of associated facilities within the project area as described in the Application. No problems were noted.

3.3.3 Engineering Design Drawings
Engineering design drawings were provided prior to construction (Docket #5 Application, Appendix A, Figures A-7 and A-8). Details regarding technology used in the SCCT were also listed. A list of buildings and segments of construction was also included in the design.

3.3.4 As-built Drawings and GIS Files
As-built alignment drawings and associated CAD or GIS files have not been filed with the PSC to date.

3.4 PRE-CONSTRUCTION

3.4.1 PSC-Required Documents
A Letter of Intent was filed with the PSC on 23 September 2011 (Docket #1). The PSC moved that the one year waiting period between filing the Letter of Intent and the Siting Application be shortened to two months (Docket #2, 3, Commission Motion acknowledging Letter of Intent). A ten year plan was submitted in 2011 and is filed under a different case number (PU-11-503). The proposed project is consistent with the ten year plan and no deviations are expected.

3.4.2 Pre-Construction Conference/Weekly Updates
Record of the pre-construction conference was on file and notice was provided during the meeting of intent to start construction on 23 April 2013 (Docket #38, Meetings notes and attendance list from preconstruction conference). Construction reports were filed weekly, as required (Docket #39-70, 72, 75, 80-87, 89-93, 95-98, Weekly Progress Reports).

3.4.3 PSC Approval of Modifications
There were no notifications to modify the facility filed to date. Observations of on-the-ground infrastructure coincided with maps on the Application.

3.4.4 Permits and Approvals from Other Agencies
Permits and licenses obtained for the Project and filed with the PSC (Docket #37) included:

- City of Mandan - Stormwater Calculation Requirements
- ND Department of Health – Air Pollution Control Permit to Construct
- ND Department of Health – NDPDES General Permit for Stormwater Discharges from Construction Activities
- City of Mandan/Morton County Building Permit

3.5 CULTURAL RESOURCES

3.5.1 Cultural Site Avoidance

North Dakota State Historical Society concurred with the Class III Cultural survey results, indicating they would concur with a "No historic Properties Affected" determination (Docket #5, Application, p. C-39). The report for the Class III survey was not included in the project Application or in the PSC case docket, though the Application (Docket #5) and an exhibit from the hearing (Docket #27, Exhibit 5) stated that the survey and report had been completed. Wenck recommends the PSC obtain a copy of the report for the project file.

3.5.2 Reporting of New Discoveries

No new discoveries of cultural, archeological, or historic sites have been reported to the PSC to date and no discoveries were recorded on the weekly construction reports for the Project. Presumably no new sites were encountered during construction of the Project.

3.6 NATURAL RESOURCES

3.6.1 Wetlands, Surface Waters, Floodplains

It was determined that no wetlands, surface waters, or floodplains would be disturbed because none of these features were located within the project area. The wetland delineation report was not included in the project Application and has not been filed with the PSC to date, though the Application (Docket #5) and an exhibit from the hearing (Docket #27, Exhibit 5) stated that the survey and report had been completed. A letter from the ND State Water Commission stated that the project should have no impact to floodplains (Application, p. C-38). While there may not be any wetlands within the project, written documentation of the finding would be ideal to have on file. During site inspections, Wenck observed only one instance where wetlands were temporarily negatively impacted. During the initial inspection on 16 July 2013 some small truck tracks were present in the wetlands southwest of the project site. These tracks were later remedied as noted during a second inspection on 2 September 2014.

3.6.2 Ground-dwelling Wildlife

Due to the location of the Project next to an operational energy facility, it was unlikely that there would be any significant wildlife impacts. Ground-dwelling animals appeared to be the only potential wildlife affected, which could temporarily be displaced if they occurred within the planned project area. Wenck did not observe any evidence of impacts to wildlife during site inspections. An exhibit from the hearing (Docket #27, Exhibit 5) stated that a Botanical and Biological Inventory had been completed for the project area, however this report was not included as part of the project Application and has not been filed with the PSC to date. Wenck recommends this report be filed with the PSC.

3.6.3 Avian Species

The project area does offer habitat for golden eagles and bald eagles or migratory birds. The closest documented eagle nest was 18 miles southwest of the project. During Wenck's site inspections, there was no evidence of impacts to birds from the project and MDU representatives were not aware of any issues throughout the duration of construction of the project. During each inspection no bird-safe design features were observed. An exhibit from the hearing (Docket #27, Exhibit 5) stated that a Botanical and Biological Inventory had been completed for the project area, however this report was not included as part of the project Application and has not been filed with the PSC to date. Wenck recommends this report be filed with the PSC.

3.6.4 Federally-Listed Species

Potential habitat and known occurrences of the piping plover are documented near the project area. However because of the site-specific nature of the project and project construction, impacts were not expected to this species. The USFWS concurred that there would be no significant impacts to wildlife (Docket #5, Application, p. C-27). Wenck confirmed that construction activities did not extend past the project area and human activity and use of the area already existed, therefore impacts to the plover from the project would have been highly unlikely. An exhibit from the hearing (Docket #27, Exhibit 5) stated that a Botanical and Biological Inventory had been completed for the project area, however this report was not included as part of the project Application and has not been filed with the PSC to date. Wenck recommends this report be filed with the PSC.

3.6.5 Rare Species or Significant Ecological Communities

Several known occurrences of rare species and significant ecological communities are on record near the project area. Because of the site-specific nature of the project, impacts were not expected to any of these occurrences. Wenck confirmed that construction activities did not extend past the project area, therefore impacts to these biological features would have been highly unlikely. An exhibit from the hearing (Docket #27, Exhibit 5) stated that a Botanical and Biological Inventory had been completed for the project area, however this report was not included as part of the project Application and has not been filed with the PSC to date. Wenck recommends this report be filed with the PSC.

3.6.6 Reporting

There were no reports filed documenting the presence of threatened or endangered species or bald or golden eagles during construction or operation to date and no observations were recorded on the weekly construction reports for the Project. It is assumed none were observed during construction.

3.6.7 Native Prairie

Approximately 14.9 acres of mixed-grass prairie was disturbed by the construction of the SCCT, with approximately 5.5 acres permanently converted (Appendix A Photos 7-9, 12). Wenck confirmed that project construction was limited to this project area and noted that surrounding areas were protected with silt fence surrounding the project perimeter (Appendix A Photos 3, 10, 14). An exhibit from the hearing (Docket #27, Exhibit 5) stated that a Botanical and Biological Inventory had been completed for the project area, however this report was not included as part of the project Application and has not been filed with the PSC to date. Wenck recommends this report be filed with the PSC.

3.6.8 Tree & Shrub Mitigation

MDU provided a Tree Mitigation Plan and several revisions and supplements to the plan (Dockets #71, 73, 74, 76), which included a pre-construction tree count and method for replenishing those trees affected by construction. The Commission approved the plans (Dockets #77-79). Once the plantings were complete, MDU filed a Final Tree and Shrub Mitigation Plan recording the number, type, and location of all plantings (Docket #94). Wenck observed that planting of new trees was complete in areas that were impacted by construction and generally followed the Tree Mitigation Plan and the Tree and Shrub Mitigation Specifications.

3.7 CONSTRUCTION, RECLAMATION & SOILS

3.7.1 Erosion and Sedimentation Control

The Project Application states that BMPs would be utilized during construction to minimize the potential for sedimentation and erosion control. Numerous weekly construction reports documented the installation and use of various erosion and sediment control features (Docket #39-70, 72, 75, 80-87, 89-93, 95-98 Weekly Construction Reports). During the interim inspection, Wenck observed that the construction site was in good condition with silt fence and erosion control devices installed at appropriate locations (Appendix A Photos 1- 5 & 14). Erosion control devices had held up well in the past rains (2013). The concrete washout pit was lined and retaining water with no spill-over to the surrounding area (Photo 15). The stormwater pond was under construction at the time of the first inspection (Photo 4, 6). One minor control problem was noted: a portion of the silt fence was down in the road ditch on the south end of the project site just east of the main entrance. A second inspection of the Project took place on 2 September 2014 and the silt fence had been replaced. All other silt fence on the site was intact and functional.

3.7.2 Road Crossings

None of the project plans indicated that any of the facilities associated with this project would have required open cut excavation or boring (a natural gas pipeline connecting to the project has been approved and permitted under a separate case). There were no indications during site inspections that open cuts or boring were utilized for project facilities.

3.7.3 Staging Areas

During inspections it was noted that staging of equipment was only done on land owned by MDU (Appendix A, Photo 16).

3.7.4 Reclamation & Roads

Weekly construction reports as well as SWPPP reports indicated that cleanup and reclamation had occurred concurrently with construction activities (Docket #39-70, 72, 75, 80-87, 89-93, 95-98). Wenck recommends that the PSC request documentation from Sega when vegetation has fully established. Nearby roads that were utilized during construction had been maintained during construction and restored where needed back to pre-construction condition. It was confirmed during all inspections that only existing roads had been used during construction and that no new roads had been built. The entire site had been graded and was used to accommodate vehicle traffic "on-site".

3.7.5 Construction Management

Weekly construction reports were submitted for the duration of construction (Docket #39-70, 72, 75, 80-87, 89-93, 95-98 Weekly Construction Reports). Construction went as planned except for a couple weeks in May 2013 (week of the 20th & 27th) when heavy rainfall occurred and left the site unworkable. Construction then continued until being suspended at the end of the week of December 16, 2013 due to cold weather (Docket #70, Weekly Construction Report). Construction resumed in March 2014. There were no documented safety issues throughout the Project.

3.7.6 Soil Segregation

In general it appeared that measures were taken to minimize the overall impact of the Project and the extent of land and soil disturbance. As stipulated in the Application soil appeared to be separated out into topsoil and subsoil piles. Impacts to soils associated with the project were not significant. Soil impacts were localized and BMPs, silt fence, etc. were implemented to minimize these impacts.

3.7.7 Reseeding
At the time of the second site inspection, any areas of bare soil had been covered with straw and seeded. Following construction, the site was re-graded and contoured to facilitate drainage away from all onsite structures (Appendix A Photos 7, 8, 12, 13). All disturbed areas inside the fence line of the SCCT were resurfaced with crushed rock aggregate and/or paved with concrete (Appendix A Photos 12, 13). All other temporarily disturbed areas were re-vegetated with an NRCS approved seed mixture in a manner consistent with the surrounding vegetation (Appendix A Photos 9-11, 14). Wenck recommends that the PSC request documentation from Sega when vegetation has fully established.

3.7.8 Fencing, Repairs & Waste
The Heskett Station Facility has a permanent perimeter fence installed. A main gate on the south side of the project site was utilized for security purposes throughout construction and will continue to be utilized during operation of the facility (Appendix A Photo 11). Existing fences and gates were not removed or damaged during construction. It was also noted during both inspections that the site was well maintained, organized and had limited amounts of debris (Appendix A Photo 7, 8, 12, 13, 16). Trash was disposed of properly.

3.7.9 North Dakota One-Call Participation and Notification of Damage
There was no written documentation that Sega participated in North Dakota One-Call. However, there were no notices filed to date of damage to underground facilities and no reports as part of the weekly construction reports.

3.8 OPERATION

3.8.1 Air Emissions
Emissions increases have been disclosed and their effects analyzed in the Air Permit Application. Consultation and compliance was being coordinated with the ND Health Department (Docket #5, Application, p. C-30 to C-32). No risks had been identified to the public. Jurisdiction of emissions would be under the ND Health Department.

3.8.2 Hazardous Materials Generation & Disposal
The operation of the project would result in the generation of small quantities of hazardous wastes. Such materials will be included under existing permits MDU has for the existing Heskett facilities.

3.8.3 Noise Limits
MDU commissioned a noise assessment for operation of the plant, which was included in the Application (Docket #5, Application, Appendix E). The study disclosed the potential effects to residences to the west of the site. Levels measured at 51 dB(A) approximately 1,400 feet from the proposed turbine along the eastern edge of an agricultural-zoned area containing several residences are predicted to increase by 1.2 dB(A). Ordinance 1090 does not establish noise limits for agricultural zones, but does establish noise limits for industrial zones of 80 dB(A) during the day and 75 dB(A) from 11 p.m. to 7 a.m. Therefore the project would not be a significant increase from existing levels and would not exceed noise limits.

3.8.4 Emergency Response Plan
An Emergency Action Plan was submitted by MDU prior to the start of commercial operation in May 2014 (Docket #88).

3.8.5 Safety & Record-keeping

No concerns were identified during the site review that would indicate that Project construction or operation was out of compliance with the Application or safety regulations. Weekly reports document no safety concerns. No injuries or extraordinary events were reported to date.

3.8.6 Maintenance

During the final inspection temporary fence was being removed (except in certain areas of landowner purchase), along with silt fence and any other non-bio-degradable erosion control devices. There was no waste, debris, or abandoned equipment in any areas inspected and maintained. Most areas within the project area were well maintained and have been restored to a natural condition.

3.8.7 Public Complaints

No records of complaints regarding the facility have been filed to date.

3.8.8 Public Safety

With the proposed Project being constructed on land owned by MDU, public safety concerns are going to be mostly associated with construction traffic on roads near the site, noise levels from the operation of the SCCT, and environmental impacts on air and groundwater quality. The Heskett Station Facility already has security measures in place, and these were being utilized for the SCCT, as observed during site inspections. These include a fence around the perimeter of the property, locked gates, and a check in system for visitors.

4.0 Issues to Resolve and Recommendations

4.1 PROJECT SPECIFICATIONS NEEDING WRITTEN VERIFICATION

Several components of the Project were asserted in the Application or proposed construction and could be verified in writing, but have not been filed with the PSC. Table 2-1 summarizes these items, which are indicated as those shaded in the "Written Verification" column, indicating no written verification was provided where applicable and necessary. Wenck does not consider any of these items to be critical for Project compliance. However Wenck suggests they be on file with the PSC to confirm compliance. Wenck recommends the PSC request from MDU the following list of "Necessary" items, and if the PSC deems appropriate, the list of "Potential" items could also be requested.

Necessary Items

- Provide as-built design specifications and associated GIS files within 3 months after construction complete.

Potential Items

- Class III Cultural Resources Report
- Wetland Delineation Report
- Botanical and Biological Inventory

4.2 FINAL RECLAMATION

At the time of the site inspections, portions of the project area were not yet fully reclaimed. Wenck recommends that the PSC request documentation from MDU/Sega when vegetation has fully established. MDU/Sega should also notify the PSC if they decide to construct "on-site" roads in the future.

4.3 TREE & SHRUB MITIGATION

The PSC should expect 2015, 2016, and 2017 Tree and Shrub Survival Reports from MDU.

5.0 Conclusions

Overall, the Project appeared to have been constructed as designed with minimal impacts to the surrounding natural or human environment. The Project site was well-maintained and in good condition. However, Wenck observed several issues that may need to be resolved before the Project is considered complete and in full compliance. This includes: clarification of the approved Project with as-built drawings, filing of several cultural and biological field study reports, establishment of reclaimed vegetation, and survival reports for the tree and shrub mitigation. None of these are critical issues, but the PSC should determine which are necessary for the company to comply with and then notify the company what actions are required on their part

6.0 References

North Dakota Public Service Commission (ND PSC). 2014. Online Case Search. Available from: http://www.psc.nd.gov/database/company_case_list.php. Accessed September -December 2014.

7.0 Signatures

The services performed by Wenck scientists for this project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Kevin Magstadt and Secondary Project Manager, Luke Nelson, prepared the report.

_____ _____

Kevin Magstadt, P.E., Principal/Regional Manager Date

_____ _____

Luke Nelson, Project Engineer Date

Appendix A

Photographs

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